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METHOD FOR PRODUCTION OF A WHOLE GRAIN RYE BREAD
[VERFAHREN ZUM HERSTELLEN VON VOLKORNROGGENBROT]

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The invention relates to a method for the production of a whole grain bread which is made from ground rye. According to the invention, it is possible, without sourdough, to make a firm bread of particularly high nutritional value, high vitamin content, and easy digestibility (up to 95%) from the ground grain.

Before, bread from rye, even whole grain bread, was produced only with the use of sourdough, because as is known, in contrast with wheat, rye does not have its own gluten, and the rye meal as such therefore does not have any cohesion. Only by adding sourdough to the rye dough does it gain the required cohesion, so that it is able to retain the gases developed by the yeast as the dough sets, and especially in the subsequent baking process, so that it has a fluffy crumb. If the sourdough is left out, the bread remains flat, because the gases freely escape through the non-cohesive dough. In the prior art, the production of the sourdough takes place in several stages in a warm room at around 25 to 30°, likewise with the use of warm water.

In contrast to this, the essence of the invention lies in the production of a whole grain rye bread without sourdough production. The freshly ground grain, which in order to retain the available enzymes, vitamins, and other physiologically valuable components, is ground at the lowest possible temperature, which should not exceed around 35°, after dough formation with water at an unusually low temperature of around 10 to 12°, with no additives, is left to rest

for around 48 hours. Only by means of this rest of the doughed meal in a moist state is it possible to achieve the cohesiveness of the dough, which in the conventional method is induced with the help of sourdough or other leavening means. The meal broken down in this manner is now made ready for baking only with the addition of yeast

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which is in the form of a starter dough, and can then be baked in the usual manner.

It is obviously surprising that the inventor has succeeded in giving this dough the necessary cohesion without the addition of sourdough, merely by doughing the meal in cold water and allowing this dough a long rest. This is however clearly to be attributed to the special properties of the ground whole grain, in which, in contrast to the usual milling, no sharpening, thus no removal of the germ bud, no elimination of the husk or the seed coat etc. takes place.

In a previous source, there is indeed a method indicated, according to which rye grains are treated in a water tank with stirring, whereby the grain is transformed into a fine mash. The yeast is then directly added to this mash, and after kneading and fermentation, the loaves are formed and baked. There is no mention of resting of a doughed milled grain wetted with water. Also there is no mention of maintaining a specific temperature.

This method is not feasible in the described form. For after the addition of yeast and 6 hours of fermentation, as described, if baking is immediately carried out, the bread would remain entirely flat, as the dough possesses no cohesion at all, as corresponds to general experiences in the above field. However, even if, in contrast to the source statements, one does include resting of the wet milled grain in the sense of the invention, this method would still not lead to the desired result, as for dough resting at the high temperatures usually prevailing in the baking room, or even at room temperature, the dough would experience an uncontrollable change owing to the always present wild bacteria, yeasts, fungi, etc., which would make it generally unusable for consumption. For this reason, even in the usual baking method, an addition of sourdough is made in order to suppress wild fermentation by means of developed acid bacteria.

In contrast to this, the breakdown of the dough in accordance with the invention takes place with the dough at rest in the cold. At these temperatures, wild enzymes cannot develop, and there is only an enzymatic relaxation of the grain components, which results in the desired cohesive dough.

Specifically, the method in accordance with the invention is roughly as follows:

The grain is first broken up and ground in a sparing manner, such that it is only moderately heated, not above 35 to 40°, in order to

protect its nutritional values, its aroma, and its vitamins. The meal obtained in this way is processed into a dough (the main dough) in a separate room, whose temperature is no more than 10 to 12°, with the addition of water of the same temperature, and now will be left to stand at the same temperature conditions for around 48 hours in order to open up.

In addition to the main dough, a starter dough is prepared in the same manner, about one quarter the amount of the main dough. The starter dough is kept at the same low temperature for around 48 hours to allow it to open up.

Thereupon a comparatively small amount of yeast, dissolved in cold water (10 to 12°) is added to the starter dough (around 75 to 100 g of yeast for 50 kg of meal), and then the leavened piece is again allowed to rest and open up further for around 12 hours at the same temperature conditions.

The main dough is now mixed with the starter dough (leavened piece) of the same age with the addition of cooking salt dissolved in cold water of 10 to 12° (900 to 1000 g for 50 kg of meal), and then the dough mixture is allowed to rise, i.e. mature, at the same temperature conditions, which takes around 6 hours.

Only now is the dough, prepared under the above comparatively low temperatures, ready to be brought into the normal 25 to 30° baking room for preparation and baking. The dough is weighed in equal pieces

and placed in greased baking pains, in which again as usual it is allowed to mature, and is then baked at moderate heat (around 220°).

With this dough, prepared without leaven and with only a very small addition of yeast, whose main component, the meal, was prepared and opened up at the above comparatively low temperatures, demonstrably a firm whole grain bread in loaf form is obtained, with good digestibility and nutritional value, as well as high vitamin content.

The starter dough needed for production of the leavened piece can also be taken from the mass of the main dough after it has rested for around 48 hours, instead of producing the starter dough separately.

The use of a dry and growth-free grain, which possess a hectoliter weight of no less than

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70 , is advantageous for a good outcome of this method.

The whole grain bread produced in accordance with the invention is also distinguished for its low water content.

Claims

1. Method for the production of whole grain rye bread from a grain ground at moderate temperature and yeast, characterized in that, to a main dough made of meal and water, after about 48 hours of rest at around 10 to 12°, a smaller quantity of a starter dough is added, which was produced through the addition of yeast to a meal-water mixture held at the same temperature for 48 hours, whereupon the whole after around 6 hours of maturation at the same lower temperature is baked at moderate temperature.

2. Method in accordance with Claim 1, characterized in that the starter dough after about 48 hours of rest is cut from the main dough and after the addition of yeast, after another around 12 hours is combined with the latter.